

We claim:

1. A method of delivering a process solution from a process housing to a workpiece surface during an electrochemical process, wherein a filter element divides the process housing into an upper chamber including a top opening and a lower chamber including an electrode, the method comprising the steps of:

placing the workpiece surface adjacent the top opening;

filling the upper chamber with the process solution until the process solution touches the workpiece surface;

diverting a portion of the process solution through the filter to fill the lower chamber; and

discharging an equal portion of the process solution from the lower chamber.

2. The method of Claim 1, wherein the step of diverting includes cleaning the filter element.

3. The method of Claim 1, wherein the step of discharging includes removing bubbles from the lower chamber.

4. The method of Claim 1, wherein the step of discharging includes removing impurities from the process solution in the lower chamber.

5. The method of Claim 1, wherein the step of placing the workpiece surface adjacent the top opening increases the process solution flow into the lower chamber.

6. The method of Claim 1 further comprising the step of removing the workpiece surface away from the top opening to reduce the process solution flow into the lower chamber.

7. The method of Claim 1 further comprising filling the lower chamber with the process solution prior to the step of filling the upper chamber.
8. The method of Claim 1 further comprising filtering the process solution near the opening of the upper chamber.
9. A method of delivering process solution to a workpiece surface from a process housing having a top opening and an electrode, during an electrochemical process, the method comprising:
- filling an upper chamber of the process housing with the process solution until the process solution touches the workpiece surface;
  - filing an intermediate chamber of the process housing with the process solution;
  - diverting a portion of the process solution from the intermediate chamber through a filter to fill the lower chamber; and
  - discharging an equal portion of the process solution from the lower chamber.
10. The method of Claim 9 further comprising filling the lower chamber with the process solution prior to the step of filling.
11. The method of Claim 9 further comprising filtering the process solution flowing through the top opening of the process housing.
12. The method of Claim 9, wherein the step of filling the intermediate chamber includes filtering the process solution from the upper chamber.

12. The method of Claim 9, wherein the step of filling the upper chamber includes filtering the process solution from the intermediate chamber.
13. The method of Claim 9 further comprising placing the workpiece surface adjacent the top opening with the process solution to increase process solution flow to the intermediate chamber and the lower chamber.
15. The method of Claim 9, further comprising removing the workpiece surface from the top opening to decrease process solution flow to the intermediate chamber and the lower chamber.
16. A system for electroplating a surface of a workpiece using a process solution, comprising:  
a solution housing configured to house an electrode and to contain the process solution;  
a filter element disposed in the solution housing configured to partition the solution housing into a lower chamber and an upper chamber; and  
an upper inlet port coupled to the solution housing configured to deliver the process solution to the upper chamber of the solution housing to fill the upper chamber and the lower chamber immersing the electrode in the lower chamber.
17. The system of Claim 16 further comprising a discharge port coupled to the lower chamber configured to discharge process solution from the lower chamber of the solution housing.
18. The system of Claim 16 further comprising a lower inlet port coupled to the lower chamber configured to deliver process solution to fill the lower chamber of the solution housing with the process solution.

19. The system of Claim 16, wherein the filter element includes a first section having a first pore size and a second section having a second pore size.
20. The system of Claim 16, wherein the filter element includes pores with graded size.
21. The system of Claim 16 further comprising another filter element disposed between the lower chamber and the upper chamber to define an intermediate chamber.
22. The system of Claim 21, wherein the another filter element includes a pore size smaller than the filter element.
23. The system of Claim 21, wherein the upper inlet port is configured to deliver the process solution to fill the intermediate chamber.
24. The system of Claim 21 further comprising an intermediate inlet port coupled to the intermediate chamber configured to deliver process solution to fill the intermediate chamber with the process solution.
25. The system of Claim 24, wherein the intermediate inlet port is configured to deliver process solution to fill the upper chamber.
26. The system of Claim 21, wherein the filter element is configured to guide bubbles to an outlet port.